

PATENT
Attorney Docket No. SEL 132 DIV 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Shunpei YAMAZAKI, et al.

Serial No.:

Filed: Herewith

Examiner:

Art Unit:

For: ELECTROOPTICAL DISPLAY DEVICE

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PRELIMINARY AMENDMENT

Please enter the following Preliminary Amendment in the above-identified patent application prior to substantive examination.

On page 1, before the first paragraph of the application, please insert the following:

--This is a divisional of prior U.S. Application Serial No. 09/329,597, filed June 10, 1999.--

IN THE CLAIMS:

Please add the following new claims:

--36 (New). A method of manufacturing a display device comprising the steps of:

forming a thin film transistor over a substrate;

forming a pixel electrode electrically connected to the thin film transistor;

forming a body with a textured surface on the pixel electrode; and

forming a light reflection film on the body with the textured surface.

37 (New). A method according to claim 36, wherein the pixel electrode comprises at least one of Al and Ag.

38 (New). A method according to claim 36, wherein the body with the textured surface comprises at least one material selected from the group consisting of SiO_2 , MgF_2 , Na_3AlF_6 , an acrylic resin, and polyimide.

39 (New). A method according to claim 36, wherein the body with the textured surface has an uneven portion of 1 μm or less in height on the surface.

40 (New). A method according to claim 36, wherein the light reflection film comprises at least one material selected from the group consisting of TiO_2 , ZrO_2 , Ta_2O_5 , ZnS , ZnSe , ZnTe , Si , Ge , Y_2O_3 , Al_2O_3 , and Indium Tin Oxide.

41 (New). A method according to claim 36, wherein the display device is a reflection type liquid crystal display device.

42 (New). A method according to claim 36, wherein the display device is incorporated in at least one selected from the group consisting of a portable telephone, a video camera, a mobile computer, a head mount display, projector, a personal computer, a goggle type display, a player apparatus, and a digital camera.

43 (New). A method of manufacturing a display device comprising the steps of:

forming a thin film transistor over a substrate;

forming a pixel electrode electrically connected to the thin film transistor;

forming a body with a textured surface on the pixel electrode;

forming a light reflection film on the body with the textured surface; and

flattening a surface of the light reflection film by a CMP process.

44 (New). A method according to claim 43, wherein the pixel electrode comprises at least one of Al and Ag.

45 (New). A method according to claim 43, wherein the body with the textured surface comprises at least one material selected from the group consisting of SiO_2 , MgF_2 , Na_3AlF_6 , an acrylic resin, and polyimide.

46 (New). A method according to claim 43, wherein the body with the textured surface has an uneven portion of 1 μm or less in height on the surface.

47 (New). A method according to claim 43, wherein the light reflection film comprises at least one material selected from the group consisting of TiO₂, ZrO₂, Ta₂O₅, ZnS, ZnSe, ZnTe, Si, Ge, Y₂O₃, Al₂O₃, and Indium Tin Oxide.

48 (New). A method according to claim 43, wherein the display device is a reflection type liquid crystal display device.

49 (New). A method according to claim 43, wherein the display device is incorporated in at least one selected from the group consisting of a portable telephone, a video camera, a mobile computer, a head mount display, projector, a personal computer, a goggle type display, a player apparatus, and a digital camera.

50 (New). A method of manufacturing a display device comprising the steps of:
forming a thin film transistor over a substrate;
forming a pixel electrode electrically connected to the thin film transistor;
forming a body with a textured surface on the pixel electrode; and
forming a light reflection film on the body with the textured surface,
wherein the light reflection film has a higher refractive index than the body with the textured surface.

51 (New). A method according to claim 50, wherein the pixel electrode comprises at least one of Al and Ag.

52 (New). A method according to claim 50, wherein the body with the textured surface comprises at least one material selected from the group consisting of SiO_2 , MgF_2 , Na_3AlF_6 , an acrylic resin, and polyimide.

53 (New). A method according to claim 50, wherein the body with the textured surface has an uneven portion of 1 μm or less in height on the surface.

54 (New). A method according to claim 50, wherein the light reflection film comprises at least one material selected from the group consisting of TiO_2 , ZrO_2 , Ta_2O_5 , ZnS , ZnSe , ZnTe , Si , Ge , Y_2O_3 , Al_2O_3 , and Indium Tin Oxide.

55 (New). A method according to claim 50, wherein the display device is a reflection type liquid crystal display device.

56 (New). A method according to claim 50, wherein the display device is incorporated in at least one selected from the group consisting of a portable telephone, a video camera, a mobile computer, a head mount display, projector, a personal computer, a goggle type display, a player apparatus, and a digital camera.

57 (New). A method of manufacturing a display device comprising the steps of:
forming an insulated gate field effect transistor on a semiconductor substrate;
forming a pixel electrode electrically connected to the insulated gate field effect transistor;

forming a body with a textured surface on the pixel electrode; and
forming a light reflection film on the body with the textured surface.

58 (New). A method according to claim 57, wherein the pixel electrode comprises at least one of Al and Ag.

59 (New). A method according to claim 57, wherein the body with the textured surface comprises at least one material selected from the group consisting of SiO_2 , MgF_2 , Na_3AlF_6 , an acrylic resin, and polyimide.

60 (New). A method according to claim 57, wherein the body with the textured surface has an uneven portion of 1 μm or less in height on the surface.

61 (New). A method according to claim 57, wherein the light reflection film comprises at least one material selected from the group consisting of TiO_2 , ZrO_2 , Ta_2O_5 , ZnS , ZnSe , ZnTe , Si , Ge , Y_2O_3 , Al_2O_3 , and Indium Tin Oxide.

62 (New). A method according to claim 57, wherein the display device is a reflection type liquid crystal display device.

63 (New). A method according to claim 57, wherein the display device is incorporated in at least one selected from the group consisting of a portable telephone, a video camera, a mobile

computer, a head mount display, projector, a personal computer, a goggle type display, a player apparatus, and a digital camera.

64 (New). A method of manufacturing a display device comprising the steps of:
forming an insulated gate field effect transistor on a semiconductor substrate;
forming a pixel electrode electrically connected to the insulated gate field effect transistor;
forming a body with a textured surface on the pixel electrode;
forming a light reflection film on the body with the textured surface; and
flattening a surface of the light reflection film by a CMP process.

65 (New). A method according to claim 64, wherein the pixel electrode comprises at least one of Al and Ag.

66 (New). A method according to claim 64, wherein the body with the textured surface comprises at least one material selected from the group consisting of SiO_2 , MgF_2 , Na_3AlF_6 , an acrylic resin, and polyimide.

67 (New). A method according to claim 64, wherein the body with the textured surface has an uneven portion of 1 μm or less in height on the surface.

68 (New). A method according to claim 64, wherein the light reflection film comprises at least one material selected from the group consisting of TiO_2 , ZrO_2 , Ta_2O_5 , ZnS , ZnSe , ZnTe , Si , Ge , Y_2O_3 , Al_2O_3 , and Indium Tin Oxide.

69 (New). A method according to claim 64, wherein the display device is a reflection type liquid crystal display device.

70 (New). A method according to claim 64, wherein the display device is incorporated in at least one selected from the group consisting of a portable telephone, a video camera, a mobile computer, a head mount display, projector, a personal computer, a goggle type display, a player apparatus, and a digital camera.

71 (New). A method of manufacturing a display device comprising the steps of:
forming an insulated gate field effect transistor on a semiconductor substrate;
forming a pixel electrode electrically connected to the insulated gate field effect transistor;
forming a body with a textured surface on the pixel electrode; and
forming a light reflection film on the body with the textured surface,
wherein the light reflection film has a higher refractive index than the body with the textured surface.

72 (New). A method according to claim 71, wherein the pixel electrode comprises at least one of Al and Ag.

73 (New). A method according to claim 71, wherein the body with the textured surface comprises at least one material selected from the group consisting of SiO_2 , MgF_2 , Na_3AlF_6 , an acrylic resin, and polyimide.

74 (New). A method according to claim 71, wherein the body with the textured surface has an uneven portion of $1 \mu\text{m}$ or less in height on the surface.

75 (New). A method according to claim 71, wherein the light reflection film comprises at least one material selected from the group consisting of TiO_2 , ZrO_2 , Ta_2O_5 , ZnS , ZnSe , ZnTe , Si , Ge , Y_2O_3 , Al_2O_3 , and Indium Tin Oxide.

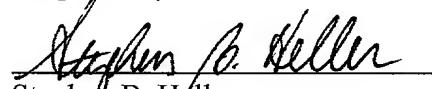
76 (New). A method according to claim 71, wherein the display device is a reflection type liquid crystal display device.

77 (New). A method according to claim 71, wherein the display device is incorporated in at least one selected from the group consisting of a portable telephone, a video camera, a mobile computer, a head mount display, projector, a personal computer, a goggle type display, a player apparatus, and a digital camera.--

REMARKS

This is a Preliminary Amendment to the above-identified patent application.

Respectfully submitted,



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